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ABSTRACT

This manual provides tips on improving indoor air quality within the school environment by removing the elements that trigger asthma attacks in children, and presents a list of organizations where asthma resource information can be obtained. Air quality management tips cover removing of animal and cockroach allergens, cleaning up mold and controlling moisture, eliminating secondhand smoke exposure, and reducing dust mite exposure. Additionally covered are administrative initiatives to support clean indoor air efforts such as the development of a school asthma management plan and a school-based asthma education program, and the creation and filing of student asthma action cards. A sample asthma card is included. (GR)

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United States Environmental Protection Agency

Indoor Environments Division (6609J) Office of Air and Radiation

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IAQ Tools for Schools

Managing Asthma in the School Environment

EF 005 800

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10 Ways to Manage Asthma in the School Environment

1. Use the IAQ Tools for Schools Kit

- Help people with asthma by improving the school environment with IAQ practices recommended in this kit.

2. Control Animal Allergens

- Remove classroom animals from the school, if possible.
- If not, locate animals away from sensitive students and ventilation systems.

3. Control Cockroach Allergens

- Use Integrated Pest Management practices to prevent cockroach and other pest problems (e.g., store food in tightly sealed containers and place dumpsters away from the building).

4. Clean Up Mold and Control Moisture

- Fix moisture problems and thoroughly dry wet areas within 24-48 hours to prevent mold growth.
- Clean up hard, moldy surfaces with water and detergent, then dry thoroughly.

5. Eliminate Secondhand Smoke Exposure

- Enforce no-smoking policies in the school.

6. Reduce Dust Mite Exposure

- Make sure the school is dusted and vacuumed thoroughly and regularly.

7. Develop an Asthma Management Plan in Your School

- Include school policies on inhaler and other medication usage, and emergency procedures for school staff for use when a student has an asthma attack.
- Obtain the National Asthma Education and Prevention Program's *Managing Asthma: A Guide for Schools*.

8. Provide School-Based Asthma Education Programs

- Contact your local American Lung Association about *Open Airways For Schools*, a school-based asthma management program for students with asthma.

9. File Student Asthma Action Cards

- Make sure students with asthma obtain and turn in copies of their Asthma and Allergy Foundation of America action cards to teachers, school nurse, etc.
- Encourage students to find out and identify their asthma triggers.

10. Gather Additional Asthma Information and Resources

- Establish a complete file on existing asthma and allergy-related information sources to reference throughout the school year.

The Asthma Epidemic

Asthma has reached epidemic proportions in the United States affecting about 17 million people of all ages and races, particularly children. Nearly one in 13 school-aged children has asthma, and the percentage of children with asthma is rising more rapidly in pre-school-aged children than in any other age group. Asthma is the leading cause of school absenteeism due to a chronic illness, accounting for over 10 million missed school days per year. Asthma also accounts for many nights of interrupted sleep, limitation of activity, and disruption of family and care-giver routines. Asthma symptoms which are not severe enough to require a visit to an emergency room or to a physician can still be serious enough to prevent a child with asthma from living a fully active life.

Asthma is a long-term, inflammatory disease in which the airways of the lung tighten and constrict causing wheezing, breathlessness, chest tightness, and coughing. These symptoms can be at least partially reversed, either spontaneously or with treatment. The inflammation also causes the airways of the lung to become especially sensitive to a variety of asthma triggers. In addition, the particular trigger or triggers and the severity of symptoms can differ for each person with asthma.

Since Americans spend up to 90% of their time indoors, exposure to indoor allergens and irritants may play a significant role in triggering asthma episodes. Some of the most common asthma triggers found indoors include:

- animal dander
- cockroaches
- mold
- secondhand smoke
- dust mites

Other asthma triggers include: respiratory infections, pollens (trees, grasses, weeds), outdoor air pollution, food allergies, exercise, and cold air exposure.

Asthma in Schools

Each day, one in five Americans occupies a school building and the majority of these occupants are children. Environmental asthma triggers commonly found in school buildings are cockroaches and other pests, mold resulting from excess moisture in the building, and dander from animals in the classroom. Secondhand smoke and dust mites are other known environmental asthma triggers found in schools. In addition, some literature suggests children with asthma may be affected by other pollutants found in schools from such sources as unvented stoves or heaters and common products such as cleaning agents, perfumes, and sprays.

Effectively managing a child's asthma can best be accomplished through a comprehensive plan that addresses both the medical management of the disease and avoidance of environmental triggers. Since children spend most of their time in schools, day care facilities, or at home, it is important to reduce their exposure to environmental asthma triggers as much as possible in each of these environments. This publication focuses on steps that schools can take to help children breathe easier.

Use the Indoor Air Quality Tools for Schools Action Kit

Many indoor air quality problems in schools can impact the health of students and staff, including those with asthma. Some of the indoor air quality

problems include: chemical pollutants from building or building maintenance materials; chemical pollutants from science and art classes; improperly maintained ventilation systems; and allergens from classroom animals and cockroaches or pests. Mold growth may result from standing water in maintenance rooms and near piping, or from excess moisture in ceiling tiles, carpets, and other furnishings. Also, outdoor air pollutants and pollens may enter the school through ventilation systems and/or open doors and windows.

In order to help improve indoor air quality problems in school buildings, the Environmental Protection Agency (EPA) developed the *Indoor Air Quality (IAQ) Tools for Schools* Action Kit. This kit helps school personnel identify, solve, and prevent indoor air quality problems in the school environment. Through the use of a 19-step management plan and checklists for the entire building, schools can also lower their students' and staff's risk of exposure to asthma triggers. The checklists cover the building's ventilation system, maintenance procedures, classrooms (especially animals and mold), and food service areas.

Included in the kit is a Coordinator's Guide, which explains the fundamentals of indoor air quality in schools and procedures for improving the air inside the schools. The kit also contains checklists, a background informational piece for staff, a problem-solving wheel to identify potential indoor air quality causes and solutions, a guide for health professionals, and a 30-minute, two-part video covering the ventilation checklist and a school's implementation of *IAQ Tools for Schools*.

To use the *IAQ Tools for Schools* Kit, most schools form an IAQ coordinating team which implements the kit during the school year. Because IAQ problems can originate anywhere in the school building, usually the entire staff is informed and brought into the process of improving the indoor air. In addition,

students can be involved in the process. Information about available curricula on indoor air quality can be found on EPA's web site (www.epa.gov/iaq/schools).

School districts across the United States have adopted *IAQ Tools for Schools*, thus improving the air quality in all of the districts' buildings. *The IAQ Tools for Schools* Kit can be used alone or in conjunction with the American Lung Association's *Open Airways For Schools* asthma curriculum for eight to 11-year old children (see information included in this publication on *Asthma Management and Education*).

EPA has developed additional tools and programs to help schools and school districts implement the *IAQ Tools for Schools* Kit. This includes a step-by-step guide to successfully implementing the *IAQ Tools for Schools* Kit. This quick-start guide will help you gain a valuable understanding of the *IAQ Tools for Schools* program and provide you with a brief review of the kit, helpful implementation ideas, and case studies of several schools that have successfully implemented the kit.

Schools (or school districts) and non-profit groups may receive a copy of the *IAQ Tools for Schools* Kit at no cost simply by faxing a request on school or company letterhead to IAQ INFO at 703-356-5386. For more information, please call IAQ INFO at 1-800-438-4318. The entire *IAQ Tools for Schools* Kit can be downloaded from EPA's website (www.epa.gov/iaq/schools).

Control Animal Allergens

Classes may commonly adopt animals as a classroom pet or science project. School staff may not realize that any warm-blooded animals including gerbils, birds, cats, dogs, mice, and rats may trigger asthma. Proteins which act as allergens in the dander, urine, or saliva of warm-blooded animals may sensitize individuals and can cause allergic reactions or trigger asthma episodes in people sensitive to animal allergens.

Common Sources Found in School Settings

The most common, obvious source of animal allergen is having a pet in the classroom or school. If an animal is present in the school, there is a possibility of direct, daily exposure to the animal's dander and bodily fluids. It is important to realize that, even after extensive cleaning, pet allergen levels may stay in the indoor environment for several months after the animal is removed.

The most effective method to controlling exposure to animal allergens in schools is to keep your school free of feathered or furred animals. However, for some individuals, isolation measures may be sufficiently effective. Isolation measures include: keeping animals in localized areas; keeping animals away from upholstered furniture, carpets, and stuffed toys; and keeping sensitive individuals away from animals as much as possible.

For schools with animals, it is important to make sure that classrooms containing animals are frequently and thoroughly cleaned. In addition, animal allergens can readily migrate to other areas of the school environment through the air and on children who handle pets. Therefore, the entire building should be cleaned thoroughly.

Schools are sometimes advised to use air cleaners. Although properly used and maintained air cleaners may be effective for reducing animal dander in small areas, they should only be considered as an addition to other control methods. It is also important to carefully review information on the type of air cleaner used to make sure it is suitably sized and has high particle removal efficiency. In addition, some air-cleaning devices marketed as air purifiers emit ozone, which may be harmful to people with asthma.

Suggestions for Reducing Exposures in Schools

- Remove animals from the school, if possible.

If completely removing animals from the school is not possible, then:

- Keep animals in cages or localized areas as much as possible; do not let them roam.
- Clean cages regularly. Consider using disposable gloves when cleaning.
- Locate animals away from ventilation system vents to avoid circulating allergens throughout the room or building.
- Locate sensitive students as far away from animals and habitats as possible.
- Keep animals away from upholstered furniture, carpets, and stuffed toys.

These action items are included on the IAQ Tools for Schools Teachers Checklist.

Control Cockroach and Pest Allergens

Cockroach allergens may play a significant role in asthma throughout inner-city, suburban, and rural schools. Certain proteins which act as allergens in the waste products and saliva of cockroaches can cause allergic reactions or trigger asthma symptoms in some individuals.

Pest allergens are a significant cause of occupational asthma symptoms among laboratory workers, such as scientists who work with animals in scientific investigations. These allergens may also contribute to allergies and asthma in the general population.

Common Sources Found in School Settings

Cockroaches and other pests, such as rats and mice, are often found in the school setting. Allergens from these pests may be significant asthma triggers for students and staff in schools. Pest problems in schools may be caused or worsened by a variety of conditions

such as plumbing leaks, moisture problems, and improper food handling and storage practices. In order to manage a pest problem, water and food sources need to be controlled in the school environment. Therefore, it is important to avoid exposure to these allergens through the use of common sense, Integrated Pest Management (IPM) practices throughout the entire school.

There are four key IPM methods for reducing exposure to pests in the school setting: 1) look for signs of pests; 2) do not leave food, water, or garbage exposed; 3) remove pest pathways and shelters; and 4) use pest control products such as poison baits, traps, and pesticide sprays, as needed.

Integrated Pest Management Practices for Reducing Exposures in Schools

Check food preparation, cooking, and storage areas regularly for signs of cockroaches and pests:

- Look for dead cockroaches or pests.
- Look for waste products (e.g., pest droppings).
- Look for greasy smears on walls, which could indicate possible rat runs.

Confirm that appropriate food preparation, cooking, and storage practices are implemented:

- Review food handling and storage practices. Containers should be well-sealed, with no traces of food left on outside surfaces of containers.
- Make sure food is not kept in the classroom overnight.
- Animal food should be kept in sealed containers.

Maintain general cleanliness:

- Sweep and wet mop floors to remove food.
- Clean stoves and ovens after use.
- Wipe counters clean with soap and water or a disinfectant, according to school policy.
- Make sure trash is removed daily.
- Fix plumbing leaks and other moisture problems.
- Do not let water stand in air conditioning or refrigerator drip pans.

Select waste containers by considering the kind of waste that is placed in them:

- Food waste or contaminated papers and plastics should be disposed of properly in secured, covered containers or tied off plastic bags to discourage pests.

Empty waste containers regularly and frequently, and store them in an appropriate location:

- Follow a regular schedule of emptying waste containers in order to minimize odors and deprive pests of their food sources.
- Place dumpsters away from the building to minimize opportunities for pests to enter the building.

Eliminate pest entryways, pathways, and shelters:

- Remove clutter (e.g., stacks of papers) where cockroaches may hide.
- Seal small spaces where cockroaches may live (e.g., near where plumbing or electrical wiring goes through walls, and cracks or spaces in walls around baseboards and window sills.)
- Block possible entry points for rodents and other pests.

Do not rely on widespread, indiscriminate use of pesticides to control pests:

- Try using poison baits, boric acid, or traps before using pesticide sprays.
- Track cockroach populations by using small sticky traps or monitoring traps which contain no pesticide.
- Rats and mice should be trapped rather than baited.
- Pesticide sprays should only be used in classrooms as a last resort.

If pesticide sprays are used in the school:

- Consider notifying school staff and parents well in advance of pesticide applications.
- Schedule pesticide applications for unoccupied periods so that the affected area can be well ventilated before occupants return.
- Use pest control chemicals in strict accordance with regulations and the instructions on the container.

These action items can be found on the following checklists in the IAQ Tools for Schools Action Kit:

Teachers Checklist, Waste Management Checklist, Food Service Checklist, Building Maintenance Checklist, Ventilation Checklist

Clean Up Mold and Control Moisture

Molds can be found almost anywhere; they can grow on virtually any substance, providing moisture is present. Outdoors, many molds live in the soil and play a key role in the breakdown of leaves, wood, and other plant debris. Without molds we would be struggling with large amounts of dead plant matter.

Molds produce tiny spores to reproduce. Mold spores travel through the indoor and outdoor air continually. When mold spores land on a damp spot indoors, they may begin growing and digesting whatever they are growing on in order to survive. There are molds that can grow on wood, paper, carpet, and foods. If excessive moisture or water accumulates indoors, extensive mold growth may occur, particularly if the moisture problem remains undiscovered or unaddressed. There is no practical way to eliminate all mold and mold spores in the indoor environment; the way to control indoor mold growth is to control moisture. If mold is a problem in your school, you must clean up the mold and eliminate sources of moisture.

When mold growth occurs in buildings, it may be followed by reports of health symptoms from some building occupants, particularly those with allergies or respiratory problems. Potential health effects and symptoms associated with mold exposures include allergic reactions, asthma, and other respiratory complaints.

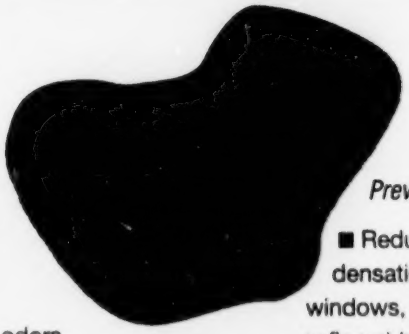
Common Moisture Sources Found in Schools

Moisture problems in school buildings can be caused by a variety of conditions, including roof and plumbing leaks, condensation, and excess humidity. Some moisture problems in schools have been linked to changes in building construction practices during the past twenty to thirty years. These changes have resulted in more tightly sealed buildings that may not allow moisture to escape easily. Moisture problems in schools are also associated with delayed maintenance or insufficient maintenance, due to budget and other constraints. Temporary structures in schools, such as trailers and portable classrooms, have frequently been associated with moisture and mold problems.

Suggestions for Reducing Mold Growth in Schools

Reduce Indoor Humidity:

- Vent showers and other moisture-generating sources to the outside.
- Control humidity levels and dampness by using air conditioners and de-humidifiers.
- Provide adequate ventilation to maintain indoor humidity levels between 30-60%.
- Use exhaust fans whenever cooking, dishwashing, and cleaning in food service areas.



Inspect the building for signs of mold, moisture, leaks, or spills:

- Check for moldy odors.
- Look for water stains or discoloration on the ceiling, walls, floors, and window sills.
- Look around and under sinks for standing water, water stains, or mold.
- Inspect bathrooms for standing water, water stains, or mold.
- Do not let water stand in air conditioning or refrigerator drip pans.

Respond promptly when you see signs of moisture and/or mold, or when leaks or spills occur:

- Clean and dry any damp or wet building materials and furnishings within 24-48 hours of occurrence to prevent mold growth.
- Fix the source of the water problem or leak to prevent mold growth.
- Clean mold off hard surfaces with water and detergent, and dry completely. Absorbent materials such as ceiling tiles, that are moldy, may need to be replaced.
- Check the mechanical room and roof for unsanitary conditions, leaks, or spills.

Prevent moisture condensation:

- Reduce the potential for condensation on cold surfaces (i.e., windows, piping, exterior walls, roof, or floors) by adding insulation.

Floor and carpet cleaning:

- Remove spots and stains immediately, using the flooring manufacturer's recommended techniques. Use care to prevent excess moisture or cleaning residue accumulation and ensure that cleaned areas are dried quickly.
- In areas where there is a perpetual moisture problem, do not install carpeting (i.e., by drinking fountains, by classroom sinks, or on concrete floors with leaks or frequent condensation).

These action items are included on the following checklists found in the IAQ Tools for Schools Action Kit:

Ventilation Checklist. Building Maintenance Checklist. Administrative Staff Checklist. Teachers Checklist. Food Service Checklist. Renovation and Repair Checklist

Eliminate Secondhand Smoke Exposure

Secondhand smoke is the smoke from the burning end of a cigarette, pipe, or cigar and the smoke breathed out by a smoker. Secondhand smoke exposure causes a number of serious health effects in young children, such as coughing and wheezing, bronchitis and pneumonia, ear infections, reduced lung function, and worsened asthma attacks. Secondhand smoke is an irritant which may trigger an asthma episode, and increasing evidence suggests secondhand smoke may cause asthma in children. The Environmental Protection Agency estimates that between 200,000 and 1,000,000 children with asthma have their condition made worse by exposure to secondhand smoke. Secondhand smoke can also lead to buildup of fluid in the middle ear, the most common cause of children being hospitalized for an operation.

Common Sources Found in School Settings

The majority of schools in the United States prohibit smoking on school grounds. However, often times smoking occurs in school bathrooms, lounges, and on school grounds. This may cause problems for students and staff who have asthma.

It is important to enforce smoking bans on school grounds in order to prevent exposure from secondhand smoke. If smoking occurs within the building, secondhand smoke can travel through the ventilation system to the entire school. Also, even when people smoke outside, secondhand smoke may enter the school through the ventilation system, open windows, and doors.

Suggestion for Reducing Exposure in Schools

- Enforce smoking bans on school property.

Refer to the IAQ Tools for Schools Health Officer/School Nurse Checklist.

Reduce Exposure to Dust Mites

Dust mite allergens play a significant role in asthma. These allergens may cause an allergic reaction or trigger an asthma episode in sensitive individuals. In addition, there is evidence that dust mites cause new cases of asthma in susceptible children.

Dust mites are too small to be seen but are found in homes, schools, and other buildings throughout the United States. Dust mites live in mattresses, pillows, carpets, fabric-covered furniture, bedcovers, clothes, and stuffed toys. Their food source is dead skin flakes.

Common Sources Found in Schools

Dust mites may be found in schools in carpeting, upholstered furniture, stuffed animals or toys, and pillows. Stuffed animals or toys, as well as pillows for taking naps, are used mostly in the primary grades.

Suggestions for Reducing Exposure in Schools

- Choose washable stuffed toys; wash them often in hot water.
- Cover pillows in dust-proof (allergen-impermeable), zipped covers.
- Remove dust from hard surfaces often with a damp cloth, and vacuum carpeting and fabric-covered furniture to reduce dust buildup. Allergic people should leave the area being vacuumed. Vacuums with high efficiency filters or central vacuums may be helpful.

Refer to IAQ Tools for Schools Teachers and Building Maintenance Checklists.

Asthma Management and Education

Experts convened by the National Asthma Education and Prevention Program (NAEPP) and coordinated by the National Institutes of Health (NIH) have reviewed the scientific literature and produced guidelines which define the best diagnosis and management practices for asthma. These NAEPP guidelines include recommendations for medical diagnosis and treatment, including the use of inhalation therapy and specific recommendations for controlling indoor environmental factors that contribute to asthma severity.

Develop an Asthma Management Plan in Your School

Schools can play an important role in helping students manage their asthma by providing support through the development of an asthma management plan. Each school should develop an overall asthma management plan which includes school policies on the use of inhalers and medications, actions or emergency procedures school staff should take when a student has an asthma attack, and student asthma action cards. The student asthma action card serves as an individual management plan for each student with asthma. It provides pertinent information to school officials on each student's asthma condition.

The asthma action card should contain the student's medical information, identified asthma triggers, emergency procedures, and phone numbers. This action card should be signed by a physician and parent or care-giver and kept on file at school. The Asthma and Allergy Foundation of America's (AAFA) asthma action card is provided in this publication. AAFA encourages duplication and distribution of the asthma action card in the school setting.

Provide School-Based Asthma Education Programs

The school setting provides an opportunity for directly educating children, parents, and care-givers about asthma management and indoor environmental triggers. An example of a school-based asthma education program is the American Lung Association's (ALA) *Open Airways For Schools*. This elementary school-based program empowers children and their parents by teaching them to take control of asthma.

Through the ALA's *Open Airways For Schools* program, children learn that their asthma can be controlled and what steps they can take to manage their condition. Specifically, they learn to prevent asthma episodes by reducing their exposure to environmental asthma triggers and using their asthma "control" medication correctly. Children also learn what to do when asthma symptoms develop, how to use "episodic" medications correctly, and when to seek help from adults.

Designed for eight to11-year old children with asthma, this curriculum consists of six lessons and is designed to be easy for trained volunteers or school staff to present. Generally held during the school day, each lesson takes about 40 minutes and is flexible enough to fit any school's schedule. The program's hands-on teaching approach utilizes group discussion, stories, games, and role-playing to promote children's active involvement in the learning process.

Children enrolled in this program have demonstrated: increased school performance; more confidence in their ability to manage asthma; greater influence on their parents' asthma management decisions; fewer episodes of asthma, as well as episodes of shorter duration; and more active management of their asthma. The program is approved and recommended by the National Association of School Nurses.

Although asthma affects children of all backgrounds, minority groups are disproportionately affected. To reach children from all backgrounds, artwork in the curriculum was designed with a distinctive multi-cultural appeal with specially designed cartoon illustrations of children in urban, rural, and suburban settings. To reach an even broader audience, ALA's *Open Airways For Schools* is now available with both English and Spanish language text on the handouts and posters.

For more information about the American Lung Association's Open Airways For Schools program, contact your local Lung Association at 1-800-LUNG-USA (1-800-586-4872) or visit the ALA website (http://www.lungusa.org.)

Asthma Action Card

Asthma and Allergy Foundation of America

Reviewed by

National Asthma Education and Prevention Program

EPA

Name: _____ Grade: _____ Age: _____

Homeroom Teacher: _____ Room: _____

Parent/Guardian Name: _____ Ph: (H) _____

Address: _____ Ph: (W) _____

Parent/Guardian Name: _____ Ph: (H) _____

Address: _____ Ph: (W) _____

Emergency Phone Contact #1: _____
Name Relationship Phone

Emergency Phone Contact #2: _____
Name Relationship Phone

Physician Treating Student for Asthma: _____ Ph: _____

Other Physician: _____ Ph: _____

Emergency Plan

Emergency action is necessary when the student has symptoms such as _____,

_____, _____, _____,

_____, or has a peak flow reading of _____.

Steps to take during an asthma episode:

1. Check peak flow.
2. Give medications as listed below. Student should respond to treatment in 15-20 minutes.
3. Contact parent/guardian if: _____
4. Re-check peak flow.
5. Seek emergency medical care if the student has any of the following:
   - ✔ Coughs constantly
   - ✔ No improvement 15-20 minutes after initial treatment with medication and a relative cannot be reached
   - ✔ Peak flow of _____
   - ✔ Hard time breathing with:
     - Chest and neck pulled in with breathing
     - Stooped body posture
     - Struggling or gasping
   - ✔ Trouble walking or talking
   - ✔ Stops playing and can't start activity again
   - ✔ Lips or fingernails are grey or blue

ID Photo

Emergency Asthma Medications

	Name	Amount	When to Use
1.			
2.			
3.			
4.			

Asthma Action Card

Daily Asthma Management Plan

(Identify the things which start an asthma episode. Check each that applies to the student.)

❑ Exercise
❑ Respiratory infections
❑ Carpets in the room
❑ Food _____
❑ Strong odors or fumes
❑ Chalk dust/dust
❑ Animals
❑ Other _____
❑ Change in temperature
❑ Pollens
❑ Molds

Comments _____

Control of School Environment

(List any environmental control measures, pre-medications, and/or dietary restrictions that the student needs to prevent an asthma episode.) _____

_____

_____

Peak Flow Monitoring

Personal Best Peak Flow Number: _____

Monitoring Times: _____

Daily Medication Plan

	Name	Amount	When to Use
1.			
2.			
3.			
4.			

Comments/Special Instructions

_____

_____

_____

For Inhaled Medications

❑ I have instructed _____ in the proper way to use his/her medications. It is my professional opinion that _____ should be allowed to carry and use that medication by him/herself.

❑ It is my professional opinion that _____ should not carry his/her inhalec medication by him/herself.

_____
Physician Signature Date

_____
Parent/Guardian Signature Date

BEST COPY AVAILABLE

Additional Resources

For more information on asthma contact:

U.S. Environmental Protection Agency

http://www.epa.gov/iaq
Download the *IAQ Tools for Schools* Action Kit from EPA's website.

U.S. EPA Indoor Air Quality Information Clearinghouse (IAQ INFO)

(800)438-4318
(703)356-5386 Fax
Call and request the *IAQ Tools for Schools* Action Kit.

Allergy and Asthma Network/Mothers of Asthmatics, Inc.

(800)878-4403
www.aanma.org
Ask about obtaining their School Information Packet.

American Lung Association

(800)LUNG-USA
www.ala.org
Ask about the *Open Airways For Schools* program.

Asthma and Allergy Foundation of America

(800)7-ASTHMA
www.aafa.org
Ask about AAFA's *Asthma Management at School* presentation for parents and school personnel. Also available are additional school-based child and teen education materials.

Center for Disease Control and Prevention

(770)488-7320
www.cdc.gov
Find out more information on the Asthma Prevention Program by visiting this website.

Integrated Pest Management in Schools Website

www.ifas.ufl.edu/~schoolipm/
Find out more IPM information by visiting this website.

National Association of School Nurses

(207)883-2117
www.nasn.org
Ask about obtaining Asthma Modules to present to school staff.

National Asthma Education and Prevention Program

(301)592-8573
www.nhlbi.nih.gov
Ask about obtaining four publications: *Managing Asthma: A Guide for Schools*, *Asthma and Physical Activity in School*, *How Asthma Friendly is your School?*, and the *Asthma Awareness Curriculum*.

National Education Association Health Information Network

(800)718-8387
www.neahin.org
Call to request information on a variety of health issues in schools, including asthma. Check website for IAQ in schools information.

National Parent Teacher Association

(800)307-4PTA
www.pta.org
Ask about obtaining an Asthma Module to present at PTA meetings.

School Asthma Website

www.school asthma.com
An educational website designed for school nurses.

EPA has included the names, phone numbers, and E-mail addresses of these non-profit organizations in this publication for informational purposes only. This does not imply Agency endorsement of the products, services or general policies of any of these organizations. Further, the organizations mentioned in this publication are not the only sources of information on asthma in schools. Additional information may be obtained from your physician or other health care provider, insurance carrier, school system, or state or local public health agency as appropriate.

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1200 Sixth Avenue
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Remember...

10 Ways to Manage Asthma in the School Environment

1. Use the IAQ Tools for Schools Kit
2. Control Animal Allergens
3. Control Cockroach Allergens
4. Clean Up Mold and Control Moisture
5. Eliminate Secondhand Smoke Exposure
6. Reduce Dust Mite Exposure
7. Develop an Asthma Management Plan in Your School
8. Provide School-Based Asthma Education Programs
9. File Student Asthma Action Cards
10. Gather Additional Asthma Information and Resources

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